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ABSTRACT

Project Employability (Ohio) was designed to improve the employment skills of low functioning educable mentally retarded and high functioning trainable mentally retarded high school students. The project was implemented through both process and student outcome objectives. A contributing factor to the program's success was its association with a regional resource center. The program consists of six products in book form: "Employability Assessment Instrument," "Employability Curriculum," "Community Job Task Analysis," "Home/School/Work Handbook," "Student Work Performance Handbook," and "Employability Administrative Handbook." Staff development included inservice training, workshops, and meetings with a citizen's advisory panel. Evaluation data support the program's effectiveness in terms of students' knowledge of social and vocational information and gain in number of jobs. (SB)

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Project Employability: Employability Assessment

and

Training for Educationally Handicapped

High School Students

East Central Ohio Special Education Regional Resource Center
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Dover, Ohio 44622

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EC142180

PROGRAM AREA: Handicapped Vocational Education

PROJECT TITLE/LOCATION: Employability Assessment and Training for
Educationally Handicapped High School Students
Tuscarawas County Board of Education
New Philadelphia, OH 44663

DEVELOPER: East Central Ohio Special Education Regional Resource
Center 818 Boulevard, Dover, Ohio 44622

SOURCE AND LEVEL OF FUNDING: Funds for the three year project (1978-81)
were provided by an ESEA Title IV-C Developmental Innovative Grant.
The level of funding is as follows:

<u>Grant Period</u>	<u>Level of Funding</u>
1978-79	No. 78-D-61-1 \$68,089 Title IV-C
1979-80	No. 79-D-61-2 75,321 Title IV-C
1980-81	No. 0061-4C-81-D-3 85,620 Title IV-C
	Total \$229,030

YEARS OF PROJECT DEVELOPMENT: 1978-1981

BRIEF DESCRIPTION OF PROJECT:

Purpose

Project EMPLOYABILITY was designed to improve the employment skills of low-functioning educable mentally retarded (EMR) and high-functioning trainable mentally retarded (TMR) high school students. Within the American Association on Mental Deficiency (AAMD) definition, this population would include children within the high-moderate to low-mild range of retardation. The project includes a criterion-referenced assessment instrument for measuring levels of student functioning in 21 employability skills. These skills are as follows: social skills (self-expression, sociability, work independence, appearance, teamwork); time factors (pace, attendance, timing); performance skills (simultaneity, accuracy, dexterity, choices, direction, memory, caution); tolerance (repetitiveness, perseverance, stamina); and academic skills (reading, math, writing). A job profile was developed for each of 55 community jobs, and a system was devised to determine job preparedness by matching student profiles to job profiles. The community jobs identified were those requiring minimal entry-level skills; however, they were considered to be generally available in most communities. For example, garage helper, laundry aide, gardener, dishwasher, farm hand, assembler, mason's helper, and stock person are a few of the jobs identified. An employability curriculum to train students in the 21 employability skills was devised and sequenced across the ten levels of the criterion-referenced assessment instrument. The curriculum consists of long-range goals, short-term instructional objectives, classroom instructional objectives, activities, and resources. The objectives were written in behavioral terms. Two support handbooks were also devised to assist handicapped students in the transition from school to the world of work. A manual, developed for teacher training, introduces educators to the products and procedures necessary to implement Project Employability.

Background

Project EMPLOYABILITY was developed in response to a set of needs identified by a consortium of staff members from three special education

regional resource centers representing 16 counties in northeast and east-central Ohio. This project was then promoted by a community action council who supported the integration of handicapped students into regular classes. This committee defined as a need the lack of vocational assessment and training in schools serving low-functioning educationally handicapped students.

To further determine if the statements of needs identified by these committees were consistent with the thinking of special educators in the east-central Ohio region, a survey was conducted to retrieve pertinent information regarding the needs previously identified. The survey was mailed to 14 psychologists, 12 TMR educators, 7 EMR supervisors, and 7 EMR work-study coordinators. The survey represented all regional TMR schools, all EMR supervisors, all work-study coordinators, and a random sample of one-third of the psychologists in the ten-county region. Some of the respondents represented both TMR and EMR programs; thus, some of the respondents answered for both EMR and TMR. The survey first explained the defined needs. Then the respondents were asked if they believed that the existing program was adequate in meeting the employability needs of this student population. Of the TMR educators, 3 answered yes, and 17 answered no. Of the EMR educators, no one answered yes while 24 answered no. Thus, the response of these experts in the field substantiated the region-wide need for improved vocational assessment and training for these students.

This need was further substantiated by statistics from the Ohio Department of Education, Division of Special Education, which indicated that during the 1975-76 school year 2,658 or 19.6% of all EMR students eligible for work-study were receiving no hands-on training or work experience. Most of this population was considered to be unemployable while at the same time special education standards mandated that vocational objectives become an integral part of every child's high school program.

Areas of highest need were identified next by a regional task force of psychologists, special education supervisors, work-study coordinators, and teachers; and objectives were formulated and prioritized as follows:

1. To identify and task-analyze appropriate skill areas of training
2. To develop a profile of criteria for students needing this type of vocational training
3. To identify and task-analyze available community jobs
4. To develop and field test a vocational training model
5. To determine possible school settings, training facilities, or agencies to house a vocational training model
6. To develop products to be used in vocational training
7. To develop an in-service package to be used to train the teachers

The current project was devised to provide special educators in this region with products to meet vocational training mandates for this population. Thus, with these products, special educators should be able to identify appropriate vocational objectives to meet the employability needs of all EMR and TMR high school age students.

GOALS AND OBJECTIVES:

Goals

The goals of Project EMPLOYABILITY are three-fold as follows:

1. To define the concept of employability by identifying specific minimal levels of performance necessary for employment in community jobs

2. To develop and field test a procedure for determining a student's present level of vocational functioning and ultimately to match student job skills with appropriate job placement criteria
3. To establish appropriate instructional strategies to improve student performance to a level of employability and thereby to make job placements possible for the EMR and TMR students who are presently unserved by existing work-study and sheltered workshop programs

Objectives

The project was implemented through both process and student-outcome objectives. The process objectives resulted in the development of specific products. When these products were applied to an experimental student population, the results fulfilled student-outcome objectives. A summary of the project objectives are as follows:

Process Objectives

1. A task force of community employers, vocational rehabilitation counselors, and work-study coordinators will compile a listing of and task analyze community jobs in which the lowest functioning employees, clients, or students could be employed and will establish a job entry-level profile of 21 employability skills for these community jobs.
2. A task force of psychologists, special education teachers, vocational rehabilitation counselors, and work-study coordinators will develop and field test an assessment instrument for measuring levels of student functioning in the 21 employability skills.
3. A task force of EMR and TMR teachers, special education supervisors, work-study coordinators, and sheltered workshop personnel will develop and field test an employability curriculum with long-term goals, short-term instructional objectives, activities, and resources.
4. A task force of psychologists, special education supervisors, work-study coordinators, and vocational rehabilitation specialists will develop two support products to assist the student in the transition from school to work.

Student-Outcome Objectives

1. The students will show significant improvement on at least one of 21 employability performance skills as measured by ratings on a criterion referenced checklist.
2. The students will acquire the qualifications for significantly more community jobs than will a group of other low-functioning mentally retarded students enrolled in a conventional special education program.

The process objectives were evaluated for standard and quality by use of a 1-to-5 rating scale of pertinent criteria devised by the project director and three university consultants. The student-outcome objectives were evaluated by using a criterion-referenced student profile of 21 employability skills. A control and experimental group were pre- and post-tested with this scale during field testing. The evaluation on which claims of effectiveness are based focused on the student-outcome objectives, and these results are included on pages 8, 9, and 10. Also, the Social and Pre-Vocational Information Battery (SPIB) was applied during the record year of field testing, and these results are on page 9. T-tests were used for levels of significance.

CONTEXT AND STUDENTS SERVED:

A major factor contributing to the success of the program and to the project's ability to attract a great deal of school and community support was the fact that it was associated with a regional resource center. The project was administered by the East Central Ohio Special Education Regional Resource Center (ECO SERRC) which is a voluntary participatory management system established specifically to assist school districts and parents with the development and implementation of special education programs for handicapped children. The ECO SERRC, one of sixteen such centers in the state of Ohio, serves an area consisting of the following ten counties: Belmont, Carroll, Coshocton, Guernsey, Harrison, Holmes, Jefferson, Muskingum, Noble, and Tuscarawas. This region represents fifty school districts with a total student population of 102,000. The policy-making body of ECO SERRC is a governing board consisting of superintendents from each of the school districts in the region. By voting unanimously to administer this project, the governing board not only endorsed it but influenced participation from school districts within the region. A Community Communications Council involving 21 community representatives from throughout the region has been active in promoting the project in their local communities.

The field test sites were selected on the basis of identified student need. At least six low-functioning EMR students or six high-functioning TMR students were required at each test site. An attempt was made to produce a random sample of both the experimental and control group. The basis for selection was as follows: 1) the students were currently considered unemployable, and 2) the students were within the high-moderate to low-mild range of retardation as defined by the American Association on Mental Deficiency. The small number of students in this target population made it administratively infeasible to select on a random basis at some of the twelve test sites, thus limiting the selection process. In addition, a quota of experimental and control students was assigned to the person in charge at each site, and it was not possible to determine if any students were assigned to any given group for humanitarian reasons. This being the case, the Mann Whitney U Test was run initially between the experimental and the control groups, skill by skill, for each of the 21 employability skills. This procedure proved that there was no significant difference initially between the experimental and the control groups on average rated abilities.

After the selection, students in both the experimental and the control groups were assessed with the Employability Assessment Instrument. The students in the experimental group received the Employability Curriculum instruction based on the assessment information. The control group received no instruction from the Employability Curriculum and received only that instruction which was given to all the special education students within the class. The instruction to the experimental group consisted of an additional, separate 80 minutes per week in the Employability Curriculum. Thus, in each of the 12 test sites, a control group of at least three students was observed and compared with an experimental group of at least three students. Following the identification of students who qualified on the basis of identified need, the field test schools were selected over an area that could reflect a broad range of both school and community types. The schools, by type, ranged from city, local, and exempted village to County Boards of Mental Retardation schools. The community types included rural, small town, and cities with both agriculturally and industrially based economies. The school participants at each test site included a special education

supervisor, a classroom teacher, and a work-study or workshop coordinator. These three staff members from each of twelve school districts worked in teams to field test the curriculum products. During field testing, each team treated their sample population exactly the same.

The assessment instrument and the curriculum products of this project have met a long-standing educational need in this region.

The project's activities are easily transportable since they consist of a series of products in book form. The products were designed for implementation with currently existing special education programs with currently existing staff.

Product validity and reliability measures and applications will be presented in the next sections.

PROGRAM DESCRIPTION:

The Project EMPLOYABILITY program consists of six products in book form. Each product was developed by a task force of experts and validated through currently acceptable research procedures. The University of Virginia Discrepancy Guide was used to compare pertinent criteria for both the content and the process development. The Project Director and the university consultants applied the Ohio vocational Program Review for Improvement, Development, and Expansion (P.R.I.D.E.) and validated the project products in areas of curriculum and instruction, facilities and equipment, instructional staff, student applications, and other general student-related outcomes. In evaluating instructional materials such as those used in this study, it has been found that knowledgeable professionals can make as many as five levels of distinction; therefore, a five-point evaluative scale, modeled from the P.R.I.D.E. concept with each point given a qualitative label, was used in the evaluation of the products described below.

Employability Assessment Instrument

The Employability Assessment Instrument was developed to enable the school staff to determine student levels of functioning in 21 employability skills. The areas of assessment cover the following: social skills, time factors, performance skills, tolerance, and academic skills. The common knowledge areas of the instrument, except for the academic skills area, were defined previously in another study by Peterson and Jones in Guide To Jobs For The Mentally Retarded.**

The instrument provides for a student profile on a scale of ten which could be matched with entry-level job profiles for 55 community jobs. Thus, deficiencies in employment preparedness for any given job can be determined by matching the student's level of functioning (student profile) with the entry-level needed for the job (job profile). The product was developed by a task force of four psychologists, four special education teachers, four vocational rehabilitation counselors, and four work-study coordinators. The assessment instrument has an inter-rater reliability coefficient of .94, based on the field test results of 20 subjects from four school districts. Three university consultants and the project director designed and validated the product.

Employability Curriculum

The curriculum contains annual goals, short-term instructional objectives, classroom instructional objectives, activities, and resources for each of the 21 employability skills. Student weaknesses identified through the assessment can be corrected through instruction by

**Peterson, Richard O. and Jones, Edna M. Guide To Jobs For The Mentally Retarded. Washington, D.C.: American Institutes For Research In The Behavioral Sciences, 1964.

using the employability curriculum which is sequenced across the ten levels of the criterion-referenced scale. Areas of instructional concentration are provided in such a way that students will be able to prepare for specific community jobs. The product was developed by a 24-member special education task force consisting of supervisors and teachers, work-study coordinators, and vocational rehabilitation counselors from both EMR and TMR facilities. Three university consultants and the project director designed and validated the product.

Community Job Task Analysis

This handbook of task analyses of 55 community jobs was developed to enable teachers to prepare students for specific jobs. The handbook consists of job tasks and job task details for the 55 community jobs and is cross-referenced to the employability curriculum for teaching of those specific skills a student might need for job-entry or job-improvement. The handbook will also assist both the employer and school staff in developing on-the-job training plans for the co-op student. The product was developed by a task force of five community employers, five vocational rehabilitation counselors, and five work-study coordinators. Three university consultants assisted with the design and validation.

Home/School/Work Handbook

This handbook provides additional support to the low-functioning student in the transition period between school and the actual world of work. It was designed for use by a unique team: the parents, the employers, and school staff. It was outlined to address the issues of job preparation, job maintenance, legal responsibilities, and the applications of Project Employability as a source for job success. This product was developed by fifteen special educators who had prior experience with student community job placement. The product was designed and validated by three university consultants and the project director.

Student Work Performance Handbook

The Student Work Performance Handbook consists of both assessment and curriculum. This support product was designed to provide the low-functioning student with another base in the transition from school to the world of work and provides exercises which deal with such factors as knowledge, skills, attitudes, and value judgments. The assessment instrument in the handbook is cross-referenced to curriculum materials, and student exercises are provided. Students will learn to deal directly with many factors not covered in the Employability Curriculum, i.e., job sources, communication, cooperation, conservation. This product was developed by a task force of 24 special educators. The project director and three university consultants designed and validated the product.

Employability Administrative Handbook

This manual details for program planners the interrelationships of the project products. It outlines the use and value of each component as well as provides strategies for in-service training and for product implementation in the school program. The product was designed, developed, and validated by the project director with the assistance of three university consultants.

STAFF DEVELOPMENT:

Program Staffing

This program was implemented in twelve selected school districts in a field test during the 1980 and 1981 school years. The Project Director coordinated all activities from the East Central Ohio Special

Education Regional Resource Center with the assistance of one secretary. Activities in each test site were conducted by teams consisting of a special education supervisor, a teacher, and a work-study coordinator. Beyond the field test participants, a total of 942 educable mentally retarded and 180 trainable mentally retarded youth will be served by the project in the ECO SERRC region.

The development of the six products described above was the work of task force personnel (approximately 20 persons per product), selected from the 48 participating school districts from the ten counties associated with the ECO SERRC region. Three university consultants and the project director designed and validated the products. Four external consultants reviewed and refined the final products in preparation for print.

In-service Training

Two-day in-service sessions were conducted for individual school districts throughout the region. These sessions trained staff members to use the products in their existing school programs.

Workshops

A full-day workshop was held each year for three years to provide the project developers and task forces with the background information necessary for product development, field testing, product evaluation, and various applications of the products across existing school programs. This extensive workshop would not be necessary for a teacher to adopt this program. However, a credit course was also developed from the workshop materials for university instruction. The University of Cincinnati and Wright State University are both offering the course for credit.

Community Communications Council

A region-wide citizens' advisory panel met four times per year throughout the development. This group communicated their ideas and concerns to the developers. They also communicated project goals, objectives, and activities to their school districts, boards of education, community service clubs, area employers, and parent groups.

COSTS:

The 1978-1981 budget for the development of this project was \$229,030. The average cost of development per student per year was \$68.00. The maximum costs associated with adopting the project for a class of 15 students are presented in the chart below. Adoption costs

	INSTALLATION (Non-recurring Costs)	SUBSEQUENT YEARS (Recurring Costs)
Personnel	-	-
Personnel Inservice Training (3 persons x 2 days)	\$ 300	-
Materials	400	-
Consumables (xerox copies)	210	\$ 100
Other Costs		
Project Products (three sets)	156	-
Transportation for field experiences	248	248
TOTALS	\$1314	\$ 348
Cost per student	\$ 87.60	\$ 23.20

for a school district are in addition to current operating expenses. The materials needed are those instructional resources and aids necessary for initially implementing the project products. Consumables would include xerox copies of student forms and other replaceable materials. The project products consist of about 950 pages of curriculum and instructional materials in six bound copies.

EVIDENCE OF EFFECTIVENESS:

The research evaluation design consisted of two basic components. The facilitating aspect and process of each product was measured by use of a five-point evaluative scale with each point thereon being given a qualitative label. The student outcome and performance aspect was measured by a pre- and post-test application of a criterion-referenced test consisting of 21 employability skill measures. Student profiles were matched with job entry-level profiles to establish student employability gains. Three educational research specialists from the University of Cincinnati assisted with design, data treatment, and the interpretation of the results. The results of the evaluation with evidence of impact is presented in this section.

Interpretability-of-Measures

The validity of the 21 employability skill measures used in this project depends on two sources of authority. All but three of the measures (the academic skills) were cited by Peterson and Jones (page 5) as being necessary for the employability of educable mentally retarded students. The three academic skills added were specified by a panel of special education supervisors and administrators from three Ohio special education regional resource centers as also being necessary for employability.

The reliability of these 21 scales was enhanced by providing an operational definition for each of the ten levels on each of the 21 scales. In using them for both formative and summative evaluations of students, members of the instructional/evaluational team independently rated each student on each of the 21 scales, and for each such rating event, the three ratings were averaged if necessary.

Each of the 55 community job profiles involved in this study was drawn across the 21 scales described above by a joint task force of five community employers, five vocational rehabilitation counselors, and five work-study coordinators. The validity of these profiles depends on the expertise of the members of that task force. The reliability of these profiles is evidenced by the fact that there was complete consensus within this task force on every one of the 21 points on each of the 55 profiles.

Credibility-of-Evidence

The raw data on each student at each evaluation event was collected independently by the three members of the teaching/evaluation team, and their ratings were then compared until consensus was reached. These raw data were reduced and analyzed by the Project Director with the assistance of three University of Cincinnati consultants. The objectivity of both the raw data and the analyses thereof was assured by the reliability of the scales and profiles described above.

Evidence-of-Impact

This project defined 55 community job profiles considered to be attainable by the kind of students this program was designed to serve. Table I displays the average numbers of job profiles met or exceeded by experimental and control students both on entry into the program and also on completion of the program for each of the first two years of operation.

Table I: NUMBER OF JOBS MATCHED

	<u>January, 1980</u>			<u>May, 1980</u>		
	N	Mean	S.D.	Mean	S.D.	t
Experimental	35	4.9	10.02	10.0	16.59	1.59
Control	32	9.2	16.84	10.6	15.29	.33
	<u>September, 1980</u>			<u>January, 1981</u>		
	N	Mean	S.D.	Mean	S.D.	t
Experimental	30	2.9	7.80	9.5	16.24	2.01*
Control	26	6.2	15.58	8.0	15.60	.41

*Significant at .05 level, two-tailed test.

The field test was conducted during both the 1979-80 and 1980-81 school years; however, there was no overlap of students from year to year.

The Social and Prevocational Information Battery (SPIB), which was standardized nationally with a population of EMR students, was used to determine whether the current population showed significant improvement in employability skills. The results of this test are included in the table below.

Table II: RESULTS OF THE SOCIAL AND PREVOCATIONAL INFORMATION BATTERY (SPIB) ADMINISTERED TO THE EMR SUB-SAMPLE

<u>SPIB GLOBAL MEASURES</u>	<u>September, 1980</u>			<u>January, 1981</u>		
	N	Mean	S.D.	Mean	S.D.	t
Experimental	19	213.2	20.78	225.5	19.09	2.03*
Control	20	204.4	33.11	218.8	28.83	1.49

*Significant at .05 level, two-tailed test.

The table above further substantiates the significant change in the experimental EMR sub-group over the control group as a result of the employability instruction.

Evidence of Statistical Reliability of the Effects

The measured results of the field test are summarized in Tables I and II above. During the second year of the project the experimental group showed a significant gain in the average number of jobs matched as reflected in Table I. Significant gains were also evidenced on the Social and Prevocational Information Battery (Table II) during the second year of field testing, although the program did not directly address the SPIB test criteria. It is felt that the moderate sample sizes available and the large variability inherent in subjects of this type diminished the power of the statistical tests to report significant differences for the effect sizes observed. Other statistical approaches not reported here supported the same basic conclusion: the gains are statistically moderate compared to the natural variation in the data. It should be noted, however, that statistically significant results, even

with very small differences, can nearly always be reported simply by increasing the sample sizes. The issue is whether these gains are educationally significant in the sizes observed, with statistical significance being one kind of supporting evidence.

Evidence That the Effects are Educationally Meaningful

Referring to the data shown for the second project year in the above table, it can be seen that the average experimental student acquired the qualifications for 6.6 additional job types versus 1.7 such job types for the control student. In brief, the experimental student broadened the scope of his/her employability nearly four times as much as did the control group student during the same period of time. Since the experimental and control groups represent a true sample of the 1122 students to be served by the project in the ECO SERRC region, it can be stated that the project will have a wide impact in the area of employability of these students previously categorized as unemployable. Furthermore, since the project by design is highly transportable, it will have an effect educationally on a broad scale. Keeping in mind the purpose of education for this class of student, it may be claimed that this program is educationally meaningful.

Evidence That the Effects are Attributable to the Intervention

The use of a control group during each of the two years of this program helps rule out the usual alternative explanations of the effects found, for example, maturation and growth, media, other similar instruction, age, desire, etc.

Evidence of Generalizability to the Populations for which the Product or Practice is Intended

The replication of this experiment at twelve sites ensures the generalizability of the pooled results reported herein to all other sites dedicated to the preparation of the low-functioning educable mentally retarded and high-functioning trainable mentally retarded for employability. Furthermore, the products are designed to be highly transportable due to the generalizability of the community jobs addressed. This transportability has been further substantiated through field testing in a variety of types of school districts and communities (Described on page 4). The program can be implemented in currently existing special education programs with the currently existing staff.

The project was presented at two state conventions involving 200 members of the Ohio Association of Supervisors and Work-Study Coordinators (OASWSC) and the Ohio Council for Exceptional Children (Ohio CEC). Two summer workshops trained 75 persons in product applications. The project was presented at four Special Education Regional Resource Centers' in-service meetings in Ohio. During three consecutive years, 1979 through 1981, the project was presented at the Spring Conference of the Ohio State Department of Education, Division of Planning and Evaluation, and in 1980 to the Ohio Division of Special Education. Seventeen school districts in the ECO SERRC region held in-service meetings to introduce the products. The project was also presented at the National CEC Conference in April, 1981 at New York. The project has had wide publication exposure throughout Ohio and was accepted for consideration as a lighthouse model by the Council of Administrators of Special Education (CASE). Project EMPLOYABILITY product materials have been adopted for college instruction in credit courses at both the University of Cincinnati and Wright State University.